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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/501,269

03/28/2005

Francis Briand

Serie 5879

7498

40582

7590

01/23/2006

EXAMINER

EVANS, GEOFFREY S

AIR LIQUIDE

2700 POST OAK BOULEVARD, SUITE 1800

HOUSTON, TX 77056

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/501,269

Applicant(s)

BRIAND ET AL.

Examiner

Geoffrey S. Evans

Art Unit

1725

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 9 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15, 17-26 and 28-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24, 25 and 28-30 is/are allowed.
- 6) ☒ Claim(s) 15, 17-23 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 20060109.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The indicated allowability of the subject matter of original claims 16 and 17 is withdrawn in view of the Herrmann reference supplied in Applicant's Information Disclosure Statement of 9 January 2006 and the Banas et al. reference (see paragraph 3).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 15,17-19,21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faerber in U.S. Patent No. 6,281,472 in view of Herrmann in WO 02/43,918, published 6 June 2002 and Banas et al. in U.S. Patent No. 4,000,392. Faerber discloses laser welding with a helium-nitrogen binary gas and using a laser power as high as 3 kW (see column 3, line 45) and using nitrogen gas in the range of 10-50% with the balance being helium gas (see column 2, lines 51-66). Herrmann (918) teaches that controlling and reducing plasma is mandatory at high laser performances (see lines 28 and 29 of page 1), that helium serves to suppress plasma (see page 4, line 12) and that Herrmann teaches that the percentage of Helium required depends upon the laser power or energy density (see the last paragraph of page 2). Banas teaches increasing the laser power up to 10 kW to increase the depth of the laser weld (see figure 4). It would have been obvious to adapt Faerber in view of Herrmann et al. and Banas et al. to

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provide this to increase the laser power to increase the weld depth and to increase the proportion of helium in the gas when laser power is increased to control the amount of plasma.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faerber in U.S. Patent No. 6,281,472 in view of Herrmann in WO 02/43,918, published 6 June 2002 and Banas et al. in U.S. Patent No. 4,000,392 as applied to claim 15 above, and further in view of Arai in U.S. Patent No. 4,945,207. Arai discloses producing a gas mixture on site through a gas mixer (included in element 31), see column 3, lines 5-12. It would have been obvious to adapt Faerber in view of Herrmann, Banas et al., and Arai to provide this to control the binary gas composition with flexibility in easily changing the composition of the gas as contrasted to a premixed gas.

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faerber in U.S. Patent No. 6,281,472 in view of Herrmann in WO 02/43,918, published 6 June 2002 and Banas et al. in U.S. Patent No. 4,000,392 as applied to claim 15 above, and further in view of Mori et al. in U.S. Patent No. 5,539,180. Mori et al. teaches using premixed binary gases (any of elements 41-44) in a laser welding apparatus. It would have been obvious to adapt Faerber in view of Herrmann, Banas et al., and Mori et al. to provide this to ensure that the proper ratio of gas is used.

6. Claims 24, 25, 28-30 are allowed.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsunawa et al. in Japan Patent No. 2002-1569 discloses a

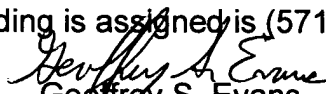
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device that can be used for laser welding with independent inlets for helium gas and nitrogen gas.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 6:30AM to 4:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571)-272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

GSE

  
Geoffrey S. Evans  
Primary Examiner  
Group 1700